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CONTACT REPORT--MRI Project No. 4602-03-03

From: Brian Shrager, Environmental Engineering Department

Date of Contact: December 20, 1994

Contacted by: Telephone

Company/Agency: Tetley's Corporation
21 Grand Avenue
Palisades Park, NJ 07650

Telephone Number: (201) 943-0600

Person(s) Contacted/Title(s)

Michael Wood, Director of Engineering

CONTACT SUMMARY: Mr. Wood was contacted to clarify several issues regarding coffee processing operations. The following issues were discussed:

- Green bean handling operations--both belt conveyor systems and pneumatic systems are used to handle green coffee beans.
- Most facilities use indirect-fired roasters, although some small facilities may still use direct-fired roasters. Direct-fired roasters contact the beans with the flame, while indirect-fired roasters typically heat the beans by convection, although conduction heating is also used.
- Control systems used on roasters include afterburners, fabric filters, and exhaust gas systems that recirculate the roaster exhaust through the roaster burner flame and then into a chamber containing a catalytic element. Referred to as a thermal catalytic oxidizer, but is actually just control with a catalyst.
- The following companies manufacture roasters and would be useful to contact for specifics on roasters: Probat (Germany), Scolari (Milan, Italy), Neo-tech (Germany), Burns (U.S.--may be a division of Blaw-Knox?), Lilla (Brazil), and Vitoria (Italy).
- General process flow--bags of green coffee beans are hand- or machine-opened, screened to remove debris, weighed, transferred to storage hoppers by belt or pneumatic conveyor, roasted, quenched (part of roasting--end of roast cycle, halts roasting), cooled, destoned (airveyors that lift the beans [roasting

changes the bean density so that separation from stones and metal is easily achieved]), equilibration--beans stabilize and dry before grinding, grinding, packaging, and shipping.

- Decaffeination--methylene chloride is no longer used in the U. S., although it is still used elsewhere and is believed to produce the highest quality decaffeinated beans. Decaffeinated green beans can be purchased in bulk, decaffeinated at a central decaffeination plant, or decaffeinated prior to roasting at a roasting facility. Extraction performed with water, solvents, and supercritical CO₂. Following extraction, steam drying or hot air drying.
- Several valuable references that may be available were discussed, including:

Coffee Technology, Sivetz and Desrosier, AVI Publications, 1979, out of print.

2 volume 1986 publication from Germany, Bernhard Rothfos, Coffee Production